

ABSTRACT

Disclosed is a method of preparing patterned colloidal crystals, including filling a monomer solution in the interstices between particles of planar colloidal crystals for photopolymerization inside them, and performing a selective photopolymerization process between the colloidal crystals using a mask. Alternatively, a method of preparing patterned colloidal crystals, including filling a first monomer solution for photopolymerization inside planar colloidal crystals, performing a first selective photopolymerization process inside the colloidal crystals using a mask, and filling a second monomer solution for photopolymerization into firstly patterned colloidal crystals, followed by performing at least one photopolymerization process inside the firstly patterned colloidal crystals using an additional mask. By the above method, colloidal crystalline regions oriented in the same direction with different refractive indexes can be controlled in a level of μm . Further, repeated patterns can be inexpensively and easily prepared.